

SHEAVES.

BY MARY L. RITTER.

A sad autumnal day—a twilight sky,
All colorless and gray;
A low wind whispering through the withered
grass
And wandering away;
Bare trees—save for a handful of brown leaves
A quiet reaper resting with her sheaves—
How poor they seem! how few, how worthless
all!
Ah! for another spring.
Or if the summer, late and cold at best,
Might come again and bring
The light and warmth that best matures the
grain
Before the frost falls and the latter rain!

REFORM IN SERMONS.

The sermon has been and is much abused—
so much so that it has become to many men,
who are neither athletes nor reprobates, a thing
to be avoided by all means, or, falling that,
to be abridged, endured, slept through, anything
but listened to. It cannot be denied that much
of this feeling is the result of our increasing
hatred of anything like physical discomfort or
penance, and our natural distaste for all things
sacred and spiritual. But preach as the preacher
may against the world, the flesh, and the devil,
we cannot abolish either of them, and the ser-
mon will cling to us persistently even in church,
while the other two are never very far off. What
better opportunity can the mind have for
wandering into secular thoughts, than the weary,
sleepy, forty-five minutes of a poor sermon?
The slight impression which even a good sermon
makes in the first twenty minutes is more than
dissipated by the concluding twenty, "and the
last state of that man is worse than the first"—
because he rises weary, impatient, exasperated,
and painfully aware that in enduring, as he has
done, he has been a martyr to public opinion
more than to his own sense of right.

It is hopeless to attempt to mould the people
of our day in the fashion of Puritan times. This
in an age of moderation, of compromise, and not
of extreme views in English religious life. Let
us therefore, take human nature as we find it,
with all its weaknesses, and let the ordinances
of worship be framed so as not to overtax the
weakest body or perplex and stupefy the fee-
blest mind. If there be little merit and less
profit in enduring a wearisome and barren ser-
vice, in which the heart does not join, how
vastly important it must be that church ser-
vices should be made, if not positive, attrac-
tive to the human eye and ear, at least agree-
able thereto, and less of a tax upon the pa-
tience and endurance of willing worshippers. In
the present day there are so many influences
drawing men's hearts away from vital religion,
that it behoves the churches to make vigorous
exertions to establish a firmer hold upon men
who evince a disinclination to frequent a place
of worship of any kind. The church, in the
wide sense, should be made, if possible, the uni-
versal resort of all professing religious faith, even
of the feeblest kind.

There is but little need to dwell upon the mu-
sical and devotional part of service, for much
has been done to improve and make these at-
tractive. The sermon, however, has not kept
pace with the other departments. In many cases,
especially in dissenting churches, it has grown
too long. Were all sermons of forty-five min-
utes eloquent and able, they would still be too
long for a standing dish. The sermon is no
longer needed (as it once was) as the chief me-
dium of instructing the people in religious truth.
The hearer needs not so much to be taught as
to be reminded, and to have heart and con-
science stirred up. This constitutes the great
difference between sermons and political or
other speeches, which must sometimes be hours
long. It requires a very able preacher, indeed,
to interest all his hearers to the end of a forty-
five minutes' sermon, because he has little new
to tell. A Chancellor of the Exchequer may
interest his hearers for two hours, because he
tells them news. Few men can compose two
original sermons, of forty-five minutes, every
week, which will command patient attention,
and tend to edification more than weariness.
What misery must commonplace men inflict,
and what misery must they endure, in their
vain endeavors to keep up to the mark. Need
we wonder that the conscientious, sensitive
man often breaks down under the task, while
he of the easy temper and ready tongue shrinks
it by trusting to weak and rambling extempor-
ary effusions. The most obvious remedy is to
shorten and simplify the sermon, and perhaps
have only one instead of two per week. It is,
doubtless, more difficult to give a fixed amount
of matter in twenty than in forty minutes, but

then don't compress the matter of forty into
twenty minutes; give short, forcible, earnest
addresses of about twenty-five minutes in the
the everyday language of educated men; ex-
punge all useless verbiage and conventional set
phrases; go over very little ground; have no
"fourthly, fifthly, and in conclusion;" but one
tending, prominent thought or truth or duty,
and only one; illustrate and enforce this with
all knowledge and eloquence, and do not weary
hearers by long and superfluous applications,
because this one distinct thought will be firmly
fixed and carried away in their minds.

There is too much running after famous
preachers, just as people run after famous
actors and singers, not to be improved, but to be
amused. It may be urged that the sermon being
a necessity in some shape, people are justified
in seeking for the best they can get; but we
submit, if all sermons were short, more ser-
mons would be good. Doubtless, were all men
devout, there would be but little need for good
sermons, and we should go to church and
worship and praise God each for himself and all
together; our devotion stimulated, as it was in-
tended to be, by social sympathy, into a grand-
der volume of praise. But, alas! we have not
reached this point, and the crying want is
fewer, shorter, and yet more intense and power-
ful sermons. We demand this both on behalf
of preacher and hearer, and, most of all, on be-
half of that growing class of people, especially
men, who are fast slipping beyond the influence
of vital religion.—*Liberal Review.*

THE CONDOR.

This greatest of uncloven birds has been sin-
gularly unfortunate in the hands of the curious
and scientific. Fifty years have elapsed since
the first specimen reached Europe; yet to-day
the exaggerated stories of its size and strength
are repeated in many of our text-books, and the
very latest ornithological work leaves us in
doubt as to its relation to the other vultures.
No one credits the assertion of the old geo-
grapher, Marco Polo, that the condor can lift
an elephant from the ground high enough to
kill it by the fall, nor the story of the traveller,
so late as 1830, who declared that a condor of
moderate size, just killed, was lying before
him, a single quill-feather of which was twenty
good paces long! Yet the statement continues
to be published that the ordinary expanse of a
full-grown specimen is from twelve to twenty
feet, whereas it is very doubtful if it ever ex-
ceeds or even equals twelve feet. A full-grown
male from the most celebrated locality on the
Andes, now in Vassar College has a stretch of
nine feet. Humboldt never found one to mea-
sure over nine feet; and the largest specimen
seen by Darwin was eight and a half feet from
tip to tip. An old male in the Zoological Gar-
dens of London measures eleven feet. Von
Tschudi says he found one with a spread of
fourteen feet two inches, but he invalidates his
testimony by the subsequent statement that
the full-grown condor measures from twelve to
thirteen feet.

The ordinary habits of the royal condor is
between the altitudes of ten thousand and six-
teen thousand feet. The largest seem to make
their home around the volcano of Cayambi,
which stands exactly on the equator. In the
rainy season they frequently descend to the
coast, where they may be seen roosting on
trees. On the mountains they very rarely
perch (for which their feet are poorly fitted),
but stand on rocks. They are most commonly
seen around vertical cliffs, where their nests are,
and where cattle are most likely to fall. Great
numbers frequent Antisana, where there is a
great cattle estate. Flocks are never seen except
around a large carcass. It is often seen singly
soaring at a great height in vast circles. Its
flight is slow and majestic. Its head is always
in motion as if in search of food below. Its
mouth is kept open and its tail spread. To rise
from the ground, it must needs run for some
distance; then it flaps its wings three or four
times, and ascends at a low angle till it reaches
a considerable elevation, when it seems to make
a few leisurely strokes, as if to ease its wings,
after which it literally sails upon the air.

In walking, the wings trail upon the ground,
and the head takes a crouching position. It has
a very awkward, almost painful, gait. From
its inability to rise without running, a narrow
pen is sufficient to imprison it. Though a
carnivorous bird, it breathes the purest air, spend-
ing most of its time soaring three miles above
the sea. Humboldt saw one flying over Chin-
borazo. We have seen them sailing at least a
thousand feet above the crater of Pichincha.

Its gormandizing power has hardly been over-
stated. We have known a single condor, not of
the largest size, to make way in one week with
a calf, a sheep, and a dog. It prefers caribou,
but will sometimes attack live sheep, deer,
dogs, etc. The eyes and tongue are the favorite
parts, and first devoured; next, the intestines.
We never heard of one authenticated case of its
carrying off children, nor of its attacking infants,
except in defense of its eggs. Von Tschudi says
it cannot carry when flying a weight over ten
pounds. In captivity it will eat everything,
except pork and cooked meat. When full fed,
it is exceedingly stupid, and can be caught by
the hand; but at other times it is a match for
the stoutest man. It passes the greater part
of the day sleeping, more often searching for
prey in morning and evening than at noon—
very likely because objects are more distinctly
seen. It is seldom shot (though it is not involun-
terably, as once thought), but is generally
trapped or lassoed.

EARTHQUAKES AND VOLCANOES.

Since the days of Werner and Hutton, earth-
quakes, and their commonly corresponding
phenomena volcanoes, have formed the debate-
able land whereon geologists of every school
have tried their skill and prowess. Whether
they indicated a continued activity in the inter-
ior of our planet, and, if so, what was their re-
lation to that activity, have been favorite topics
of debate. The chemical theory started by Sir
Humphrey Davy, that these phenomena were
produced by the sudden access of water to un-
combined alkaline metals, was for a long time
a favorite from its very ingenuity and boldness;
and, though facts to support it were difficult to
obtain, it was almost equally difficult to bring
forward well-founded arguments on the other
side. The moon has long been with poets the
emblem of fickleness and inconstancy; her
pale, silent gaze was to their minds suggestive
of lovers' vows, made only to be broken; yet
modern research gives us a very different ac-
count of our pale-faced satellite. Never, in fact,
were the poets more at fault than when they
made the orb which ever turns towards her
lord and master the same mild and deathlike
gaze, the emblem of inconstancy and change-
ableness. Without water or air, passing from
extremes of heat to extremes of cold, the cold,
quiet moon bears no life in her bosom. No
changing clouds fit across her black skies, no
streams murmur down her valleys, no seas
break on her cold, grey stones. Yet from the
moon, all unlike as she is to our ever-changing
earth, we may draw a lesson as to what our
earth is probably hastening to. Geology, a
unwearied from her researches on the face of
the earth, flies boldly across space, and seeks to
correlate the action of matter in all the worlds.
To the spectroscopic we owe the knowledge that
other worlds are composed much as our own,
that the common elements which are to a great
extent the ordinary elements with them; and,
as like ordinarily produces like, so we are just-
ified in the surmise that the succession of
phenomena on those of the heavenly bodies
with which we are more intimately connected,
is not unlike what takes place on our own
globe. Astronomers long ago detected on the
face of the moon the well-known traces of vol-
canic action; but though the marks were those
of craters and lava streams, though heights
could be measured and valleys depicted, the
strange fact remained that mortal eye had
never, so far as our astronomical records extend,
beheld on the satellite an outburst of sublinear
energy. Outbursts, like that of Skaptur Jokul,
of Sumbawa, or Chimborazo, did not require
any powerful instrument for their observation;
they would have been visible to the unassisted
eye. Little by little, the idea forced itself on
the scientific world, that the energy which had
once spent itself in volcanic activity had finally
left the moon, and that her gaze was one of
eternal death. Volcanic phenomena on the
earth are intimately connected with the pres-
ence of water, gases of various sorts are their
necessary product; yet, of water and gaseous
bodies the moon exhibited no sign. Our own
globe told us something which we might assi-
milate with the news arrived from the moon.
Sink where we would on the face of the earth,
after the first few feet of crust were pierced,
we found ourselves in presence of an increasing
heat. Did the heat increase in the same ratio,
through the mass of the earth, that it did near
the surface, a few thousands of yards would
have brought us to a temperature sufficient to
melt the most refractory bodies. Another
school, apart from the chemical, perceived in
this the plain cause of earthquakes and vol-
canoes. Astronomers, however, set themselves
to calculate the effects of such a state of matters.
A fluid nucleus, even when covered with such a
crust as proposed, must be affected by lunar
tides, and in turn affect the moon herself. No
such tides, however, could be detected by the
most delicate observations. Whatever, there-
fore, might have been the original state of the
world, there was little danger of its returning
to a state of igneous fusion. Earthquakes might
shake us, and volcanoes deluge portions of the
surface with fire, but their reservoirs of heat
were not drawn from any such internal nucleus
of fire as was required by the first supporters of
the doctrine of internal heat. So for many
years the matter rested. Partial seas of fire,
and partial disturbances of the state of internal
equilibrium had to be accounted for, and many
were the theories broached. Chemical action
again came into favor, notwithstanding the
weight of evidence against its acceptance, es-
pecially as it remained clear that some abstruse
connection did exist between the sites of vol-
canic action and the presence of large bodies of
water. Few men have devoted so much
thought to igneous and seismic phenomena as
Mr. R. Mallet; it is, therefore, not surprising
that the latest theory broached should have
proceeded from one so well known for his de-
votion to this branch of science. Our globe, he
points out, is still radiating heat into space; for
every degree so radiated some contraction of
the mass must take place. Its surface seems
to have long ago arrived at an equilibrium of
temperature, hence the contraction must take
place internally, tending continually to leave
round the shrinking internal core a loose and
unattached skin. The force of gravity con-
tinually acting on this rind draws it closer
and closer to the centre, and it, not being able
to contract, is thrown into ridges and hollow,
exactly as the skin of dried apple wrinkles and
cracks over its shrank inside. An earthquake is
the creep produced by this shrinkage, and the
consequent crumpling and crushing together of

the superficial strata; and as this forcible crush-
ing together of the matter of which the surface
of the earth is composed must produce enor-
mous development of (local) heat, we have at
once the two phenomena correlated. We can
at least imagine a third arriving when the rind
body of the earth has cooled down so far and
set so solidly that it refuses to contract any fur-
ther under the influence of internal gravity. It
has not like a plaster cast round our imaginary
apple. Into the void there to be left, the water
and air which now enliven the surface may
find an entrance. This we may presume to
have happened to our satellite, and we may
imagine, and perhaps eventually calculate, the
time when it must occur to ourselves. Thus
strangely does one science help another. Geo-
logy might at first sight seem the basest of
sciences, concerning herself with rocks and
mud; yet she calls to her aid the most ethereal
of all, and in return throws a light on celestial
phenomena otherwise beyond our comprehen-
sion. From the silent moon we are able to
extract more and stranger information than did
ever Sisyphus, Pythoness, or "Astrologer or Seer of
old."—*North China Herald.*

SCIENTIFIC AND USEFUL.

THE latest theory of earthquakes attributes
them to the subsidence of certain portions of
the earth's surface, and not to the contraction
of its crust or to volcanic action. This view is
put forth by Mr. H. P. Mallet in the *Geological
Magazine*.

THE IMPROVEMENT OF IRON.—M. Th. Scherer,
in the *Bayrisches Industrie und Gewerbe-Blatt*,
states, that if equal parts of chlorides of calcium
and sodium are added to the iron in the pud-
dling furnace, the phosphorus is eliminated, the
pulling process shortened, and a better iron
obtained. The chlorides should be in about
three times the quantity of the phosphorus in
the iron.

THERMO DIFFUSION.—It seems to be estab-
lished, by some experiments of Herr Feddersen,
of Leipzig, published in the last number of
Poggendorff's *Annalen*, that when a porous body
is brought into the form of a diaphragm, and
exposed to differences of temperature on the
two sides, a current of gas is immediately set
up from the cold towards the warmer side. The
author recognizes this phenomenon as quite dis-
tinct from ordinary diffusion, and proposes to
distinguish it as "Thermo-diffusion."

A REMARKABLE hypothesis has been ad-
vanced in France to account for the occurrence
of a dry haze visible in the atmosphere of cer-
tain regions during dry and warm weather. M.
Callan has published a paper on this subject in
Les Mondes. He says that at Paris the haze is
most commonly seen near the horizon on beau-
tiful summer mornings, which are followed by
pleasant days. It has been observed at various
heights above the surface of the earth in Spain,
Switzerland and Auvergne. The author believes
that it is produced by the combination of aro-
matics and shooting-stairs, and is akin to the
chemical matter composing the tails of comets.
The idea is as fanciful as it is original.

In a recent paper on the geography of the
region about Mount Sinai, Charles Beke, the
Abyssinian traveller, announces his desire and
intention of exploring it at an early day, and
requests subscriptions to enable him to fit out
an expedition this spring. "There ought not,"
he says, "to be any doubt of the fact that
Mount Sinai is a volcano, which, though long
extinct, was in a state of activity at the time
of the exodus," and this is one of the important
questions which he hopes to determine by a
personal exploration, thus ascertaining abso-
lutely "the situation and character of the true
"Mount of God," on which necessarily depends
not only the line of march of the Children of
Israel, but the whole history of the exodus."

THE FEVER TREE.—In a late number of the
Gazette Medica de Bahia is an interesting account
of the *Eucalyptus globulus*, an immense tree in-
troduced into various provinces of Brazil from
Australia, and called, as in Spain, the fever
tree, from its "marvellous results in the treat-
ment of intermittent fevers." The tree is colos-
sal, sometimes attaining a height of 300 feet,
and a diameter of 80 feet. All parts are aro-
matic, less so in the trunk and bark, more so in
the small roots, flowers, and leaves. It is a
comparatively new medicine, and is given in-
ternally for intermittent fever, in doses of from
one to four drachms of the powdered leaves—
twice during the intermissions—or in infusion
(two drachms in four ounces of boiling water),
morning and evening. Aqueous and alcoholic
extracts, in doses of from two to eight grains,
are also used for the same disease.

SUNSHINE AS A FORCE.—A good illustration
of man's inability for self-support, independent
of sunshine, is afforded by the following calcu-
lation: The mechanical equivalent of the verti-
cal sunshine upon a square mile of the earth's
surface is computed to be 3,223,000,000 pounds
raised a foot high in a second. Under the most
favorable circumstances, a square mile of ter-
restrial soil receiving this amount of sunshine,
if planted with bananas, would yield, according to
the estimate of Baron Humboldt, 50,000 tons of
nutritious food yearly. This is the greatest
amount of food-producing power of which the
earth appears to be capable. But this quantity
of food would suffice only 100,000 men, whose
united mechanical force would not raise more
than 10,000,000 pounds a foot high in a second.
It would, therefore, not be possible for any
number of men, by their mechanical force, to
produce anything like a sufficient light and heat
in the absence of sunshine to raise from the
soil the food needful for their own support.